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THE INTELLOFAX SYSTEM
(The CIA Library and the Machine Division)

I. EARLY DEVELOPMENTAL HISTORY (1947-54)

A. Objectives and Equipment Needs

In providing a central reference service to CIA and the intelligence community, the early managers of the Agency recognized the need to develop a machine capability for indexing and retrieving a staggering quantity of intelligence documents. The resulting Intellofax System, which evolved jointly by the Machine Division and the Library, was unique— no other government agency, no university or library and no commercial firm had anything of its type in operation. The name was coined by Dr. Andrews in 1949 to describe the system which combined IBM and facsimile reproduction techniqued for intelligence documentation purposes. Later in common parlance, the word was used not only as a noun (the Intellofax System and the Intellofax files) but also as a verb form (intellofaxed and intellofaxing for the indexing aspects) and became a household word in the intelligence community.

The actual authority for establishing the Intellofax System appeared in an ORE Instruction # 31-47, entitled Functions of the Reference Center, dated 15 July 1947. [redacted], Assistant Director of ORE, charged the Central Index (later the Machine Division) and the Intelligence Documents Division (later the CIA Library) to

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25X1A5a1 After numerous meetings with [redacted] and investigation of other companied, such as [redacted], the machine experts opted for [redacted] and a contract was let in January 1948. 25X1A5a1 By July [redacted] had produced the first of the Library Recorders and had completed the final design for the IBM card scanner.[1] Both awaited OCD approval. Experimenting and testing continued 25X1A9a and in January 1949 [redacted] reported favorably on the equipment, commenting that

> it was indeed gratifying and thrilling to see the first phase of this development actually operating and with such fine quality results. . . it illustrates the all out 25X1A5a1 effort that the people of the [redacted] have been and are putting into the job.[2]

Progress reports were prepared periodically throughout the first six months of 1949; test runs were made during June and the equipment was finally accepted in July. The Projecta Review Committee on 27 July 1949 approved an amendment to the original contract, which had been in the amount of [redacted] 25X1A1a to the amount of $[redacted][3] 25X1A1a

The Intellofax Card, or Faxcard, was an IBM punch card of standard shape and dimensions which bore on its face up to 200 words of printed information, the so-called bibliographic data: source, country, date, title, possible abstract, pagination and security classification. The corresponding coded and punched data appeared at one end of the card. The cards were sorted, selected and

SECRET

arranged by standard IBM machines; and the printed information on the selected cards was transmitted and reproduced by facsimile process.

The equipment delivered in May 1950 was the second prototype resulting from the developmental engineering begun in January 1948. "Shake-down" tests were still being conducted in mid-1951 concurrent with actual usage.

25X1A9a [redacted], an Office of Communications employee 25X1A5a1 (and formerly an engineer with [redacted]) was on temporary duty with OCD and placed in charge of the Faxcard equipment.

25X1A9a He wrote to [redacted] (chief of the Machine Methods Division since September 1950) that since the equipment was not standard equipment, additional development was anticipated before the stability of the equipment could be placed in a class with that afforded by existing teletype machines. 4/

25X1A9a At the same time that test runs were being made
25X1A5a1 on the [redacted] equipment, [redacted] investigated the potential use and availability of thermo-printers which would reproduce printed, typed or written data by a heat process.

25X1A5a1 [redacted] Minnesota, was responsive to OCD's urgent need for this type of equipment and agreed to build and demonstrate a prototype of the machine by July 1949. This was the basis for the first Intellofax tapes printed continuously onto thermofax paper, somewhat similar to, though smaller than,

(1) index, by business machines procedures, the subject matter of all available reports, and other documents of a foreign intelligence nature and (2) classify and catalogue all intelligence materials of a foreign intelligence nature to CIG.

25X1A9a [redacted] Chief of Central Index, was given the responsibility for organizing and developing the initial essential steps toward establishing a central indexing and filing system, in conformity with an earlier ICAPS recommendation in March 1947. It soon became apparent that no existing equipment would be capable of meeting the needs envisaged. Although an IBM punch card offered great flexibility and speed in the handling of thousands of cards, each of which would represent a particular document, no card would carry enough printed data to supply the researcher with titles and descriptions of documents. During 1947 25X1A9a [redacted] and 25X1A5a1 his deputy, [redacted] met with top management of 25X1A5a1 [redacted] to discuss the possibilities of the use of 25X1A5a1 standard [redacted] machines and the adoption of these machines to the documentation problem. A 25X1A5a1 [redacted] said that his company would be willing to cooperate with IBM in adapting the Telefax machine to automatically reproduce bibliographic and subject abstract data typed on IBM cards onto any type of paper including a duplicating medium. This would answer the problem of preparing accession lists and lists of abstracts requested. (Management originally planned for a daily accession list of those intelligence documents received and indexed, all of which would be abstracted.)

Memo, Acting Chief, Reference Center, ORE to Chief, Central Index 7 July 1947, sub: Establishing Central Indexing and Filing Procedures. U. (in Chrono 1946-47 58-98/8)

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The Intellofax tape, as it was known through the entire Intellofax history, was originally a 4 inch wide tape prepared by the facsimile process. The Intellofax punched card was fed into a transmitter which optically scanned the printed information. A receiver received signals from the transmitter; the printed information was impregnated into a chemically treated tape which was dried by a heat process. ~~The resulting continuous role of facsimile tape was folded and ultimately given to the requester.~~

The early OCD managers had hoped to electronically transmit the Intellofax information to requesters in their own office locations. As of 15 May 1950, 6 transmitters and 12 receivers had been delivered.* Experimentation continued throughout the summer months and the first transmission was strictly local, transmitter and receiver side by side in the Machine Division. One receiver was placed 25X1A6a [redacted] in the Branch Library, but security considerations and technical problems of transmission were responsible for not continuing with what seemed like a Utopian transmission phase.

The production of Intellofax tapes in the 1950's and 1960's first by facsimile process and later by the Card List Camera and Photostat Expeditor always remained in the Machine Division. The completed taped (folded or later in booklet form) were delivered to the requester not via electronic transmission but by hand.

* Photo of Transmitter and Receiver

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B. Coding Schemes

1. The Intelligence Subject Code (ISC)

In conformity with ICAPS wishes steps were also taken by the Central Index to prepare a unified subject classification scheme. [redacted] wrote to [redacted] in 25X1A9a 25X1A9a July 1947

> Although the Reference Branch has taken the initial steps in the direction of establishing central indexing and filing procedures, any unified acceptance of the end product of these investigations will depend upon joint action of IAB and CIG representatives and the agencies' final acceptance of the system decided upon. 6/

On 14 July 1947 [redacted] 25X1A9a entered on duty as Chief of the Classification Unit of the Intelligence Documents Division to work with the Central Index in developing a classification schedule for CIG. 7/

It was soon evident that the War Department's Basic Intelligence Directive (BID) devised during World War II for collection purposes (although it had been used for classification of documents in the G-2 Library in [redacted] 25X1A6a immediately after the war) was not adequate. The subjects listed in the BID were not sufficiently comprehensive to cover the wide range of subjects in intelligence documents because it had been devised for Army purposes only. The economic, political

and scientific sections were woefully weak. It was decided to prepare a list of subjects which would include those contained in the BID, the Navy Monograph Guide, the abridged Dewey Decimal system used by the State Department, and for scientific subjects, the Voge Classification, prepared and used by the Joint Research and Intelligence Board (JRBD).

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[redacted] made visits to the parent organizations using these classification schemes.

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By August 1947 [redacted] Classification Unit of 8 people had completed a general framework of an all-inclusive classification schedule with the assistance of [redacted] 25X1A9a

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[redacted], a classification specialist from JRBD. (OCD tried unsuccessfully to recruit [redacted] as a permanent employee). The major subject categories included: Army, Navy, Air, Political, Economic, Sociological, Scientific, Geographic, and Biographic. On 22 August a familiarization meeting was held with duly appointed representatives of the three services. The participating IAB agencies agreed to develop and/or revise their respective military categories in the BID. To those categories would be added the CIG contribution consisting of the non-military subjects. Because the War Department was not inclined to change the numbering system of the BID (8 digits), it was to be used as the nucleus of the new classification system. 8/

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[redacted] was not very enthusiastic about the cooperation from the

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other agencies. He and [redacted] had visited the State Department Librarian, who welcomed a comprehensive expansion of the Army, Navy and Air subject classification, but felt that this expansion should be incorporated into the abridged Dewey. The representatives of the IAB agencies seemed to feel that what CIG was trying to do with a new classification would replace the classification which each agency was using. This was, of course, the ultimate aim, but it would not be realized even partially until the Air Force adopted the Intelligence Subject Code in 1954. Each representative took a cosmic view of the fields which were of primary interest to his agency and argued that the whole structure of intelligence would be imperilled by any deviations with its own scheme. 9/10/

So the Library set about continuing with its own classification.

The first edition of the Intelligence Subject Code (henceforth referred to as the ISC) was dated 15 March 1948. 11/ The Preface indicated that the edition was provisional and that the subject headings were intentionally kept rather general so that expansions and revisions could be made as experience required. There was no index to this first edition. A biographic or "Who's Who" class which was in the original outline was deliberately omitted because of the Biographic Intelligence Register of the Reference Center. The main classes and the number of notations (codes) were:

000	International Situation	(32)
100	National Affairs	(120)

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200 Army (139)

300 Navy (181)

400 Air Force (83)

500 Weapons and Scientific Warfare (44)

600 Science and Technology (82)

700 Geography and Economics (232)

800 Social and Cultural Forces (67)

Total notations: 980

Each of the eight categories was broken down to provide, as nearly as possible, for the needs of the agency chiefly concerned-- the Army, Navy and Air Sections following closely the patterns developed by the three services for their own use. The other sections had been worked over in detail with the ORE units chiefly concerned.

Chapters 100 through 800 retained their overall subject outline until the complete revision of the ISC in November 1960. Further chapter sub-divisions appeared throughout 1948, but it was not until November 1948 that the 600 and 700 sections were expanded to the full six-digit capacity allotted on the IBM card. A relative index (alphabetical) was printed at the same time.

25X1A9a [redacted] in the Library who had reported for duty on 9 February 1948, took over from [redacted] in mid-1948 as Chief of the 25X1A9a Analysis Section (formerly Classification Unit), (She remained head of the input or classification effort for the Intellofax System almost 20 years until the demise of the system the end of 1947.) She worked closely with analysts of ORE/ ORR and CSI in the continuous revision process during the first five years, to ensure more effective organization of the information in documents. These research analysts pointed out deficiencies in certain subject fields and suggested appropriate changes. Most suggestions benefited and improved the ISC; others refelcted only parochial needs of insistent and narrow-in-outlook requesters who raised their subject specialty out of all proportion to the entire scheme of knowledge. The latter type of requester made one section of the ISC look ridiculous: the subject code for Plant Pathology (632.4) was sub-divided into 68 different codes for wheat, rye, barley, oat and miscellaneous crop diseases with the names in English followed by the scientific term in Latin.

The 1949 ISC resembled the original 1949 edition only in the 8 major chapter headings. Within each chapter much restructuring took place. A new heading for Communism was added and the 114 section became the most widely used and remembered throughout the book. Geography was moved from 700 to the 600 chapter. In 1950,

at the time the Library decided to catalog books according to the ISC, a 900 chapter (Organization of Information) was added.

The history of the ISC from 1948 through 1967 was a history of change and hoped-for improvement. 980 codes grew to 5,000. A review of the master copies of the ISC during these years reveals many pages of revisions. ~~Actual~~ New editions were published in 1954, 1957, 1960, 1962, 1964 and 1967. Changes in subject codes necessitated the preparation of new cards. The printed information was transferred from the old card to the new card by means of a heat process, whereas the punched data was converted by machine under punches to the new codes. This was a time-consuming process and caused backlogs in the Machine Division. (The biggest change to an entirely new ISC in 1960 did not involve conversion; thereafter, the Intellofax cards were kept in separate files--"A" file from 1960 on and "B" file-pre-1960).

All classification schemes have limitations, and the ISC was no exception, particularly since code expansion was tied into the allotted spaces on the IBM card. ~~Library personnel always worked closely with the Machine Division personnel before anything unique was adopted.~~ As mentioned earlier, the full 3rd digit expansion of the 700 chapter went into effect in November 1948. By 1950 it had become evident that certain aspects

of information could be uniformly applied to almost all and equipment commodity, subject codes in that chapter. These "actions" were production data; imports-exports; maintenance, repair, replacement and construction; procurement, etc. The Library and the Machine Division personnel worked out a unique scheme for affixing a modifier before the subject code. A list of one to two digit "action" or prefix modifier codes was established. The classifier entered them on the code sheet by placing a slash between the modifier and the subject code. For example, the production of coal was written as 4/735.1. The slash appeared on the IBM card as an overpunch in columns 1-6 (subject field).

This important change in the coding process extended eventually by 1954 to some other chapters of the ISC. Prefix modiers were applied to the military chapters in 1954 for such aspects as security, vulnerability, sabotage, order of battle, specifications and description of miltary equipment.

Other coding devices were inaugurated. One of the subject codes- 115 (Insurgent Groups) had no further breakdowns. At the request of the ORE/Greek desk at the time of a guerrilla uprising in Greece, the following instruction appeared in the 1949 ISC: The 115 code may be combined with the first two digits of any classification number throughout the ISC, e.g. monetary system of Greek Guerrillas--115.773.

The same rule applied to the 900 chapter.

Coding specificity was also achieved in another manner. ~~other instances~~. A list of languages, minorities and cultures was prepared and coordinated with Andrews (his specialty) and the 3 digit identification could be combined with either the 117 code for minorities or the 876 code for foreign languages. For example, the Italian minority was coded 117.119 and the Italian language was coded 876.119.

Statistics compiled for the Intellofax System indicated that an average of four subject codes were assigned per document.

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2. Area Classification:

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[redacted] chose the Army Map Service (AMS) Library Classification as the best and most adaptable system for coding geographic areas. According to this system the world was divided into 26 main divisions, A through Z. Each alphabetic division was further subdivided, moving from right to left with a numeric designation. For example:

M Europe
1M Scandinavia
11M Denmark
21M Finland
31M Norway
41M Sweden
141M Northern Sweden
241M Southern Sweden

AMS did not maintain its area classification on an up-to-date basis; therefore, the Analysis Branch (the Section became a Branch early in 1950) was constantly expanding the code and updating it to specific Intellofax needs. When India was divided into India and Pakistan in 1948, the former code of 5U became EU for India and NU for Pakistan, with further subdivisions for both countries. Political-geographic concepts and some types of country relationships were designated by means of a slash(/) which always followed an area code. For example, /A denoted a League, Confederation, Axis or International Organization. Thus, the Arab League was coded 6K/A; the United Nations became 1/A. (1 had been

established as the code for the World). /C denoted Communist influenced or dominated countries and was used effectively with the Eastern European or Far Eastern blocs. By this device the Machine Division could easily retrieve information on all Communist countries (other than the USSR which had its own area code of N). It was easy to segregate the Russian Zone of Germany (4M/C) from West Germany (4M/D).

Related Areas

The original design of the IBM card allowed for the four digits (columns 7-10) of the AMS code. Soon thereafter, column 11 was allotted to the slash. Two years of experience pointed up the inability of being able to show any area relationships. This came to a head with the 1950 Korean War, when it seemed necessary to be able to show some combination of Communist China, USSR, North Korea, South Korea or the United States. The entire punching area of the IBM card (other than the subject field which always remained the first ten digits) was revamped, eliminating certain codes which did not seem necessary, such as day of publication and date of information, and adding other codes, such as two-digit abbreviated area codes to be used only as related areas in columns 19-22. The revamped card of February 1950 provided

SECRET

space for two related areas of two digits each. Area codes without contained more than two digits became abbreviated, such as 228M to SI for Spain. The classifier * indicated them on the code sheet with a parenthesis to alert the key punchers.

Example: N (6M) (JM)- some relationship between the USSR (N) and France (6M) and Russian Zone of Germany (JM)

Area File

The advent of the Korean War also brought out the need for a separate file arranged by area. Requests which were coming in for everything on Korea could not be answered quickly because the primary file arrangement of the Intellofax card was by subject code. Beginning in September 1950, the Machine Division started an adjunct Area File by preparing one extra card for each main area (there was no card filed by related area). No subject code was punched into the card. The Area File filled a specific need at the time, when many analysts were woefully ignorant of Korea. It continued to serve effectively in retrieving all information on smaller areas, such as the oblasts of the USSR and the provinces of China. Because the Area File grew so rapidly and was consequently useless for large areas in its set-up without subject code punches, the Analysis Branch and the Reference Branch made an agreement in 1953, concurred in by the Machine Division, that area cards would be punched only for

* Analysis Branch professional personnel were called by various titles: classifiers, indexers, coders (the most common, but the least professional), and finally Library or document analysts.

SECRET

the European satellites (except the Russian Zone of Germany), USSR oblasts, Central American (except Mexico) and South American countries, African countries, Asiatic countries (incl. Near, Middle and Far East), Finland, Yugoslavia, Trieste, the Vatican, and islands (except Australia and New Zealand).

In 1955 another important change was made in the Area File. The classifier underlined one subject/area combination considered most representative of the whole document. The entire 6-digit subject code was punched into the area card, but within a given area the card was filed only by the first three digits of the ISC.

3. Miscellaneous Codes

a. Security Classification

With the completion, although continual revision, of the ISC and the adoption of the AMS Area Classification, thought was also given to other necessary codes to be punched into the IBM card for complete retrieval. Dr. Andrews issued a memorandum on 3 January 1949 to "All Hands, OCD," establishing uniform codes to be used on all OCD coding operations. The Procedure Manuals of the Intellofax System (1949, 1954, 1959, 1960, 1967) show the security classifications with various controls which evolved as more and more non-CIA requesters used the system. In 1949, in addition to the actual security classification codes, there were only two types of controls--US Officials Only and CIA Internal Use Only. Over the years, others were added to the coding pattern so that the machines could eliminate certain document citations with controls such as Controlled Dissemination, Warning Notice-Sensitive Sources, No Dissem Abroad, No Foreign Dissem, etc.

b. Source Locator [13]

In June 1948 the Library issued Library Bulletin No. 1. Entitled the "Locator System," it explained that the intelligence document files in the Library had been set up according to "A" and "S" files. An arbitrary division, it was devised for

practical and simplified location and filing of documents. "A" files included mainly attaché reports and State despatches as well as CIA raw intelligence (00-B's and SO's). "S" files included mainly finished intelligence, intelligence summaries, monthly or weekly reports, and the like. The first number in the locator was a two-digit code assigned to a particular agency. The remaining four digits were the country and the post for "A" type documents and branch and division of the agency for "S" type. Thus, 05A0601 referred to an Army attaché report from [redacted] and 05S0601 referred to an Army series type document from the Far East Command, ATIS. These same designations were also used for indicating the source of the document on the Intellofax punch card.

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By 1 June 1949 it was necessary to issue a second bulletin because of numerous changes in organizational divisions of government agencies. In the intervening year, in addition to the "A" and "S" type categories, four more had been added: "C" correspondence and Executive Registry material, "G" basic intelligence studies, "L" bibliographies and "P" press. By February 1950 these arbitrary type designations were no longer punched in to the Intellofax card.

The two-digit source locators remained basically unchanged until May 1954, when specific city or post locators for Army, Navy and Air attaché reports were no longer considered necessary

for retrieval. By January 1956 only the two digit source locator was used for everything except CIA, foreign government reports and Top Secret documents.

01- Air
02- CIA
03- Navy
04- State
05- Army
06- Defense in general
07-14 Other government agencies
15- Executive, Legislative and Judicial Branches
16- Non-government
17- International Organizations
18- Foreign Governments

The coding schemes described in the previous pages provided selectivity in retrieval. Requesters were always urged to be as specific as possible on subject requests and not to ask for too general a subject, such as Politics (the entire 100 chapter of the ISC)—[redacted]. The only reason for a 6 digit ISC was to pinpoint specific subjects, if possible. Provincial breakdowns of USSR and China helped area specialists. Requesters were also reminded that the date of publication was punched in the IBM card. Why ask for all years when only 1950 was needed? Security classification and source specificity were part of the retrieval picture, although not requested as often as subject, area and date limitations. Requesters sometimes thought they knew the source of a document and they proved to be wrong when a rerun was made for all sources. The same was often true about date.

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The following is a typical request using all the code selectivity:

Communist Party penetration of labor organizations in [redacted] during 1949-50. CIA document (SO) only.

Through Confidential. Original card format

114.562	Subject code	(columns 1-6)
61	Country code	(columns 7-10)
49-50	Dates	(columns 24-25)
02-0404	Source	(columns 13-20)
3	Security classification	(columns 12)

4. Abbreviation File

A reference tool which the classifiers found a need for as early as January 1949 was a list of abbreviations of organizations which appeared in intelligence documents. A manual file of 3" x 5" cards was established out of necessity because there was no one list of abbreviations, particularly of a classified nature, which met the complete need for identification. A statement of functions of the CIA Library in September 1950 included : "Maintain and service a central file of abbreviations and code names for intelligence documents."

Established originally because of an indexing need, the growing Abbreviation File (49,000 by 1959) was also used by the reference librarians when published lists of abbreviations did not answer specific reference queries. The card contained the abbreviation, the area, the title translatio the foreign title, a brief descriptive comment, and the source of the abbreviati Offices throughout CIA, particularly FDD, supplied hundreds of abbreviations and their identification to this File. A note appeared in

the front of the CIA Telephone Directory under services of the CIA Library encouraging requesters to make use of the File. In 1954 a publication was distributed entitled "Abbreviations of U.S., [redacted] and International Organizations of Intelligence Interest " (CD # 1). 25X1X7

Thereafter requests were received to publish certain segments of area interest, such as all Russian abbreviations, but there had been no attempt to confirm translations or even the correct foreign language title.

C. Data Base

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1. [redacted] Daily Reports 14/

From the very beginning,
The Reference Center was eager to begin some kind of indexing using machine techniques, so while negotiations were continuing for the development of the Intellofax equipment and for the construction of a unified classification scheme, management decided to index the [redacted] Daily Reports. This actually became the first data base available for machine retrieval from the Reference Center. Two analysts from the Classification Unit were assigned this task and that manpower coverage continued until indexing was discontinued in 1952. Card punching began on 19 August 1947. The index cards contained the following information: security classification; pamphlet date; one one-digit subject from nine major subject categories (Army, Navy, Air, Science and Geography, Domestic Political Affairs, Foreign Political Affairs, Economics, Sociology and Miscellaneous); page reference; intercept headline; transmitter; target countries. 99 countries with a two-digit sequential code made up the area codes. The requester was furnished with a listing of the selected cards showing: intercept heading; page reference; pamphlet date; security classification; and areas. By the end of September 1947 14,762 cards had been punched and filed. By November the index covered reports issued since May.

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This method of indexing [redacted] Daily Reports continued

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until January 1949, when a procedure was put into effect that allowed for a redesign of this particular IBM card in order to make use of the ISC subject and area codes. Again only one subject code was permitted. The name of a prominent individual was entered in the first 15 spaces of the caption, which was restricted to 40 spaces.

A year later [redacted] and the CIA Library jointly prepared for inclusion in the front cover of all restricted issues a short announcement advertising the available indexing facilities. Based on recurring requirements from certain offices, particularly ORE/ORR and OSI, the Library sent out typed lists of pertinent titles to these offices every week.

By early January 1952 the Library advised the discontinuance of the indexing of the Daily Reports for several reasons: Requests averaged only 10 a month plus four recurring requests; and with indexing restricted to one subject per article because of workload in the Analysis Branch and in the Machine Division, adequate cross references to cover all subjects within an article could not be made. The Chief, Analysis Branch in a memo to the CIA Librarian stated that the two analysts thus released would be able to devote full time to help reduce the Intellofax backlog of several thousand documents.

SECRET

Dr. Andrews concurred because of severe 1952 manpower cuts and because the OCD Registers picked up the personality and industrial plant information found in the Daily Reports. On 6 February the Library discontinued the coding of all radio broadcast information. Although the IBM cards were retired to the Records Centers, the Library retained a master printed form of all the coding effort.

The issue of the desirability of re-establishing a machine index to the [redacted] Daily Reports was raised periodically. (See Library Consultants Report of 1957 and Herner Contract of 1958) 25X1A7b

2. Early Intellofax Coverage

With the publication of the ISC in March 1948 it was possible to start indexing in earnest. The first efforts were confined to OCB reports.[15] One Transmittal Sheet was prepared for each document: it contained a bibliographic statement, an abstract of the contents and pertinent codes. Until the Central Index had typing personnel and reproducing equipment to type and reproduce abstracts on the tabulating cards, only the punched data appeared on the IBM cards, and the Transmittal Sheets were filed in the Library.

Plans called for the receipt of 1,000 documents a day. Experience already showed that a classifier could abstract only 30 documents a day. Jim Becker noted in June 1948[16]

that a T/O of 20 professionals in the Analysis Section would not provide adequate manpower to abstract every document. In November the current intake was between 400 and 500 items a day. The 1948 backlog of approximately 12,000 SO (predecessor of CS documents from the Clandestine Services) and 3000 other CIA reports was decreasing by 150 items per day.[17] Of the backlog of non-CIA reports it was estimated that five percent of the 154,000 items would not warrant indexing because of content. The unclassified and restricted documents for 1948 were indexed by Special Projects # 1 ("the pool"). Documents issued in 1946 and 1947 were processed but only those of priority areas of interest. Becker stated that it would appear possible that "we can set a 1 January 1949 target for providing daily tab-fax service." And this did occur.

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In a report to the Assistant Librarian on 9 March 1949, [redacted] gave the following status report of Intellofax coverage:[18]

a. All "A" type reports were currently indexed since September 1948
b. "S" type documents were selectively indexed, such as all State CIR reports, and Top Secret reports.
c. All correspondence with an Executive Registry number.
d. All bibliographies on file in the Library
e. All loan items

[redacted]

Heavy backlogs frequently required stringent measures that affected coverage/ For 4 months in 1949 unclassified State Department despatches were not indexed. This was briefly expanded to include any document from [redacted] or African and Latin American posts. No effort was made later to fill this void. 25X1A6a

Document coverage rose from 46,681 documents in 1948 to 227,106 in 1950 or a total of 414,329 documents indexed into the Intellofax System the first 3 years.[19] There are no comparable figures available on the number of Intellofax requests received in this same period. From 1951 through 1953 requests from CIA and non-CIA users averaged 341 monthly.[20]

3. NODEX

Early in the indexing processing it became apparent that certain documents dealt with information that was of little or no intelligence value for retrieval purposes. The term "NODEX" was coined to represent those documents that would not be indexed into the Intellofax System. Originally these were documents of a purely administrative nature. As the System grew, however, more subjective judgment as to the value of certain information for Intellofax retrieval purposes was exercised and the list of NODEX items grew and changed. In some cases, it was subject information that was rejected; in other cases, it was an entire series. ~~There was no way the Library could prevent the receipt of these documents; besides, some office in the Agency might want to see them.~~ The whole question of what should be nodexed was ~~very~~ much debated throughout the entire Intellofax history. No two researchers agreed, and much criticism was levied on the System because of certain NODEX decisions.

The selection out criteria ~~in the early days of the Intellofax System~~ fell entirely upon the classifier, ~~who would so mark a document and its attached control card in the batch envelope.~~

Dorm Review

The Incoming and Dispatch Unit of the Library ~~soon~~ recognized certain series, such as Army Who's Who Reports. These were batched separately and did not even come to the attention

of the classifier. A control card was prepared so that there would always be a record in the Source Files for every document received. This source card, however, contained only an abbreviated bibliographic entry, i.e. source, document number, date and security classification. The title and country were not entered. This abbreviated notation saved typing time, but created problems in searching through the Source File for document identification.

The early 1950 NODEX Standards included such topics or series as:[21]

a. Purely administrative matters
b. Consular or commercial functions (replies to complaints of Americans about lack of service)
c. Notification of change in security classification
d. Agendas of various international committees
e. Order of battle (considered a military responsibility)
f. Transmittals of enclosures not attached and not described adequately enough for indexing
g. Industrial Card File (ICF) reports giving primarily plant data
h. Who's Who reports
i. Joint Weekas (considered cables)

Out of 17,367 documents processed in January 1951, 1125, ~~were nodexed~~ or 6% of the total, were nodexed

A printed list entitled "NODEX Standards from Start of Intellofax System to July 1966 ~~(Effective Dates of NODEX are in Parenthesis)~~" is indicative of the colorful history of the NODEX program. (see attachment) Throughout the years, classifiers and Reference Librarians were always reminded that the list was only a guide and that a document should not be excluded from Intellofax subject control because some items within the Standards appeared in it.

(For microfilming of NODEXES see page 43)

4. Cables

OCD management early in the Intellofax history decided that cables and telegrams would not be considered a part of the central reference system for subject/area retrieval. There was no question as to their current intelligence value, but OCD did not consider them vital to retrospective searching and therefore felt it was uneconomical to index the enormous cable flow. This philosophy carried throughout the years of the Intellofax System, although there was a brief flurry of a cable indexing experiment in 1963/64 (see _____)

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D. INtellofax Procedures

1. The Batch System

In August 1948 OCD management decided that a review of the existing and contemplated document handling procedures should be made with a view to determining if such procedures could be modified to expedite the distribution, classification and indexing of documents pending the fulfillment of T/O requirements. [redacted] of Administration and Management worked closely wi[redacted]in setting up a detailed procedure for the use of multilith mats in controlling and indexing intelligence documents. This was the beginning of the so-called "batch" system, which was modified many times during the next 19 years. A batch usually contained in one envelope 15-20 documents of like source. (This was similar to the organization of the dissemination function in the Liaison Division) **The classifiers were not organized by source breakdown until April 1952.)** *

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25X1A9a

Put into operation in December 1948, the system included the complete processing cycle of dissemination, distribution, indexing, key punching and final filing of the documents in the Library document files. On one multilith mat with a preprinted distribution ladder for dissemination points within the Agency was typed bibliographic information (source, date, title, security classification, etc.); this mat was the basis for the preparation of control slips (a cut off IBM card) to be attached to each distributed copy of a document. **One control slip also became a source card (see page 45)**

* See attachment for Batch procedures of 13 December 1948

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The classifier used one of these control slips* or cards on which to write the necessary codes for ultimate key punching. The typist prepared another multilith mat to be married with the punched IBM card. The resulting Intellofax* card contained fields on the left for the codes; on the right end of the card was the printed bibliographic information which could be easily read by the naked eye. This duplicate preparation of multilith mats was continued until 1956, when a revised batch system eliminated the preparation of control cards for distribution purposes.

In September 1949 each classifier was assigned an Intellofax stamp bearing his individual number. Used instead of the classifier's initials, the stamp was affixed in three places: (1) on the face of the document to indicate that indexing had been completed; (2) on the control card for the codes, so that key punchers could question a classifier, if necessary; and (3) on the Batch Control Sheet which stayed with the group of documents through the various processing steps.

A review of the first Procedure Manuals written in 1948 and 1949 for the machine operations and for the indexing of documents shows the intricacies of the Intellofax System as it developed. A procedure had

* See sample control slip

* See sample Intellofax card

to be written for every exception.

For example, ~~just to mention a few:~~ Extra IBM cards were printed for a number of offices- Top Secret Control in order to set up its own source card file; Contact Office for every OO-3 document coded so that the Intellofax card could be matched with OO's own contact card (and this procedure continued until 1967); Reference Branch of the Library for every Finished Intelligence and Basic Intelligence document for setting up a cumulative index by subject, area and title (this stopped in 1953); and CRE and OSI offices that were engaged in the abstract program (see page 34). A special procedure was written for loan documents that had to be microfilmed. If more than 14 subject codes appeared on the control slip, the classifier wrote "MATS" on the Batch Control Sheet opposite the CIA control number in the "coded" column to indicate that additional Intellofax cards were needed.

As the years progressed, the system became more involved and procedures were constantly revised and hopefully improved. The Machine Division and the Library personnel worked hand-in-hand in developing better and faster methods of processing the document flow and in taking care of users' needs.

* See sample Batch Control Sheet

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2. "Flash"

An indexing economy that developed was the so-called "Flash" procedure.[22] By January 1949 classifiers recognized that there was a sizable segment of documents that covered the same subject matter each time and that were issued periodically. "Quarterly Milytary Review", "Weekly List of Infectious Diseases", "Semi-Annual Railroad Statistics" were a few examples. It was a waste of indexing and key punching effort to code these documents every time they appeared. The first time such a document was encountered it was coded and abstracted in a table of contents manner; the Intellofax card bore the usual bibliographic statement but without report number or date. The word "Flash" appeared on the IBM card. A master Transmittal Sheet on which the abstract was prepared was filed in the "Flash" book in the Analysis Branch. Every time a similar document was received, its report number and date were entered into the FFlash" book on the Transmittal Sheet. When a subject retrieval request turned up the original "Flash" card, the librarian or classifier knew that he must refer to the "Flash" book to find all the documents which had been published and received. This "Flash" record was the only means of determining documeht numbers in order to retrieve the material from the document file.

Although lists of "Flashed" reports were periodically distributed to the classifiers--+ and the lists grew--+ the classifiers were always reminded to glance at the current documents to guarantee that they were sufficiently covered by the codes originally established. Changes in the ISC as well as wider subject coverage in the series did necessitate added coded.

The "Flash" system finally outlived its usefulness. Irregularity of issuance of certain series, the manual labor involved in maintaining the "Flash" book (for a period one copy was maintained in the Reference Branch also), the nuisance of not having a source card for every document, and the advent of the revised Intellofax system--all combined to bring about its demise in 1960.

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3. The Abstracting Program

Dr. Andrews was very proud of his central reference facilities and by late 1939 he felt that OCD was on the track of a "far more effective solution to providing analysts with quick retrieval of intelligence information than has ever, anywhere, been achieved before." He devoted 32 pages to a definitive description of the Intellofax System, entitling his monograph "Central Reference Facilities. Status (1 November 1949) and Objectives." (He had prepared this paper at the request of Chief, COAPS for the information of all offices.)23/ The Table of Contents is indicative of the complete coverage of his subject:

Summary
Glossary (of Intellofax terms)
Magnitude of the Problem
Classification Scheme
Intellofax System
Index Files
Abstract Files
Highly Specialized Reference Problems

In his usual dynamic approach, Andrews had briefed specialists in ORE on the potentialities of the Intellofax System and how analyst participation in the growth of the file would benefit the system and therefore the whole agency. In other words, he was asking analysts if they would like to contribute coded abstracts to the file. He stated that only the specialist could decide

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which were the important documents bearing upon his field of specialty and only the specialist could write competent abstracts of such documents. His first approach was to the NEA Division of ORE because he knew the Division Chief well. IN January of 1949 the 25X6A [redacted] began selecting and abstracting the most important documents on 25X6A [redacted]. The assumption was that if the system could be made to work satisfactorily for one area, then it could possibly be extended to specialists on other areas. OSI also commenced operations on a trial basis in February, and the Greek desk of ORE in March. (History repeats itself! During 1972/73 the GTI area 25X6A [redacted] and 25X6A [redacted] of OCI is providing input to CRS's AEGIS computer system on an experimental basis.) OCD meanwhile continued to write abstracts of a table of contents type for publications covering a wide variety of subjects and areas. On pages 23 and 25 of the Intellofax study, Dr. Andrews provided samples of OCR, ORE and OSI abstract cards. A so-called contributor code was punched into column 21 of the IBM card so that if a specialist ever wanted to retrieve only his own abstracted material, he could do so.

The two desks in CRE providing these abstracts

told Dr. Andrews that the abstract files were proving exceedingly useful and that the process of writing abstracts had in itself yielded a number of unforeseen but highly valuable by-products, ~~such as:~~ for instance, time saved in producing weekly and monthly summaries. A carbon copy of the abstract or Transmittal Sheet was filed in folders in a strictly chronological order and provided the desk chief with a fully documented history of day-to-day events in the two countries. ~~(b)~~ training of junior professionals was improved, speeded up and thoroughly locked into the production system by the assignment of writing abstracts. ~~(c)~~ Technically difficult reports no longer went into the "hold" basket, but were analyzed, researched and abstracted. ~~(d)~~ File space was saved, because the abstract could replace the original report.

Much as he had fostered and approved of the abstracting program, Dr. Andrews became concerned about the rapid growth of the abstract files in Intellofax. By the end of the year there were 18,047 abstracts (OCD-2847; ORE-6245; OSI-8955), and they were growing at a staggering rate.[28] He warned that each extension of the system to a new group of specialists involved difficult adjustments, revisions and expansions in the classification scheme, required more typists and could be accomplished only by day-to-day hard work. How true!

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[redacted] spent a large proportion of her time in 1949 and 1950 working on changes and expansions of the ISC to satisfy the needs of these new contributors. Area codes for three of the Near Eastern countries were expanded to take care of provincial divisions. This later created some problems because they were never used for retrieval in the Intellofax System.

Dr. Andrews concluded the Summary to his study with these pertinent words:

> Because of the selectivity being exercised in building up the abstract files, we are forging a tool which in years ahead will enable us to drain off from the Library those documents which are of scant importance, thus making room for the current inflow and ensuring that reports of real importance are held available. It is quite possible that the central reference system being built by CIA will ultimately prove the most important central intelligence service which the Agency provides.

The abstracting program mushroomed from its beginnings in 1949 reaching a ~~crescendo~~ peak in the early 1950's. The [redacted] 25X6A

25X6A [redacted] of NEA joined the program in 1950, as did Agriculture/FE Division. ~~In 1950 ORR contributed 16,558 abstracts; OSI 20,186.~~ 21/ Some of these desks even set up their filing systems according to the ISC subject breakdowns.

Other divisions or branches began to contribute in 1951 25X1A9a
on the encouragement of the Assistant Director, [redacted]
who was interested in space saving. ORR contributed
16,558 abstracts in 1950 and 10,695 in 1951. OSI contributions
amounted to 20,186 in 1950 and 20,715 in 1951.[25]

However, a downward trend began in 1952/53 because specialists in ORR and OSI were not interested in spending their time learning how to use the ISC correctly for in-depth indexing. OSI/Physics and OSI/Medicine continued as heavy contributors, but finally ceased in 1954 and 1955 respectively. In 1958 ORR/Shipbuilding became the last ORR component to stop input, ~~finally in 1958.~~[25]

Many production requirements left little time for abstracting. The rate of abstracting was limited in part by the Analysis Branch's typing facilities and by the abundance of equipment which could get the finished abstract back to the analyst for his own files within 24 hrs.

OCD management had always hoped that these contributions would preclude the indexing of these same documents by the OCD classifiers. This was never possible, for the specialists frequently extracted and coded..... only that part of the document that interested them. There was never any guarantee that the entire document was covered. So duplication continued; both IBM cards would turn up on a machine run if the same codes had been used (and there was no guarantee of this, either.). In such a case, the OCD classifier or the librarian in screening the cards before an Intellofax tape was made would pull out the non-abstracted card as being less meaningful.

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A great danger to the Intellofax System later surfaced after the research offices had stopped the abstracting program. References turned up which could no longer ~~not be~~ retrieved ~~any longer~~, such as articles in Russian scientific journals indexed by OSI and later thrown away. No limit as to source material had been placed on the specialist, who might even want to extract or prepare an abstract from the New York Times. In the mid-1960's (exact date not confirmed) all IBM cards with the contributor code were pulled and destroyed for they added nothing to the Intellofax file, but instead ~~rather~~ created retrieval difficulties.

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E. The Microfilm Program

One of OCD's problems was that of keeping the Library operating at a maximum peak of efficiency. The Intellofax System had made available a greater volume of library document references to a larger number of requesters than had ever before been possible. The increased output of the System had resulted in a corresponding increase in requests for the documentary materials referenced. In wishing to offer maximum service to all offices, the Library was faced with the dilemma of coalescing two variations in point of view as to these services. On the one hand some of the Library users insisted on an inviolate set of documents in the Library at all times. On the other hand, some insisted on the availability of library materials to their respective offices upon demand. In answering this criticism by an ORR analyst, Mr. Becker wrote:

> We clearly recognize the need for ensuring the availability of a master set of documents; however, keeping an original document collection poses problems of filing, space, circulation and reference which are almost overwhelming. 24/

With 617,562 intelligence documents on file (but not all indexed) in the Library by September 1950, space had also become a serious problem. There was no doubt in anyone's mind that microfilming was urgently needed.

re Microfilm Program of the
Office of Collection & Dissemination
for [redacted] & ADD/Admin 25X1A9a
15 Oct 53

(Folder DD Admin 1952-53)
DCI 58-98/2

Microfilming

In March 1950 the Library began experimenting with a microfilm and print procedure, and by mid-1951 it had begun to microfilm all single-copy material on 35 mm. reel film.

The Machine Division and the Library worked closely together to develop the best sort of system to solve the Library document storage and retrieval problem. In January 1951 [redacted] and his deputy, [redacted] examined equipment at [redacted], wherein microfilm was mounted into an IBM aperture or window card. This system allowed each document that was microfilmed to become a separate entity in itself and not just part of a reel, as was generally the case in most microfilm applications up to that time.

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25X1A9a
25X1A5a1

In October 1951 Becker told Dr. Andrews that the problem was urgent and proposed that the Library microfilm all incoming documents, keeping a copy of the document as well as the microfilm. The latter would be available at all times both for viewing purposes and for reproduction in cases where the requester wished to retain a copy. On 19 December 1951 the Project Review Committee authorized "microfilming of all significant incoming intelligence documents" and approved funds in the amount of [redacted] for the initial purchase of equipment and in the amount of [redacted] for the annual costs of personal services and supplies.

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Microfilming

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25X1A9a [redacted] withheld concurrence

[redacted] from the Deputy Director/Administration, because of jurisdictional questions raised by the Office of General Services. 25X1A9a

Organizations and Methods Service surveyed the proposed OCD Microfilm Project In Re and submitted a final report on 15 October 1953, [redacted] She recommended that the personnel required for operation of the system be on the OCD T/O and under OCD supervision, rather than under the Office of General Services. According to [redacted] she outlined what 25X1A9a the proposed system would achieve by 1956 the following: immediate film inspection, immediate customer service on the entire collection, eliminate tracing of documents and repeat borrowings from other agencies, about 90% economy in space and filing equipment, better utilization and conservation of personnel, will permit reduction in size of researchers' files and will expedite the chain routing of documents. 26b/

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Microfilming

Research and testing continued throughout 1951, 1952 and 1953. At a CIA Bidget hearing in 1953 [27], Dr. Andrews stated that the Machine Division's prime job was to keep pace with new developments all over the country but that the most important research then at hand was to develop a microfilm processor that, in conjunction with the Intellofax equipment, would ensure that the Library would give to the analyst the documents which he asked for.

Microfilming of incoming documents began officially in March 1954. The following equipment was on hand: two microfilm cameras for the purpose of making initial microfilm reels, three [redacted], 25X1A5a1 one Microtonics Film Printer for copying the original reels, (one copy of the reel was placed in the Vital Documents Repository), three [redacted] 25X1A5a1 "mounters" to cut the microfilm reels and install the frames in the aperture cards, one Photostat Printer-Processor to make positive prints from the aperture cards.

The aperture card was a punch card which had information identifying the microfilmed document printed across the top and 16mm. film images of an intellofaxed document mounted in apertures (openings) on the right-hand side. Aperture cards varied in that a single aperture might contain one, two, three or four apertures. Each aperture contained a maximum of two film images, each image being one page of a document. The basic procedures of microfilming documents did not change materially until 1966 when 35mm. film was used for the preparation of aperture cards instead of 16mm. film. Detailed procedures were outlined in "Reference Aid on Machine Support Services" (CIA/CR 25-3), dated December 1959.

Microfilming

A screening committee of librarians and machine people [redacted] was established to examine documents at the intake point and to work up proper procedures. The first documents microfilmed were State Department despatches. These were followed by Air Force reports (from an original ozalid copy, which had to be returned to the Air Force within 48 hours) in April; by Army and Navy reports in July; and by the last segment--CIA reports--in September.

The aperture cards were filed in the Circulation Branch of the Library by control number assigned to the document. 35mm. reel film was used for documents over 50 pages in length. Bulky and oversized documents were not microfilmed. The remainder of the documents were photographed on 16mm. film. (See page 46 for microfilm designators of control numbers on source cards.)

With full-scale microfilming in effect, the Library and the Machine Division soon decided late in 1954 not to microfilm NODEX documents because their contents did not meet indexing standards. In April 1955 this decision was amended so the microfilming would occur only for those NODEXES that were single copy, required further routing, contained enclosures or were of CIA origin, thus ensuring an invlokate copy in the Library.

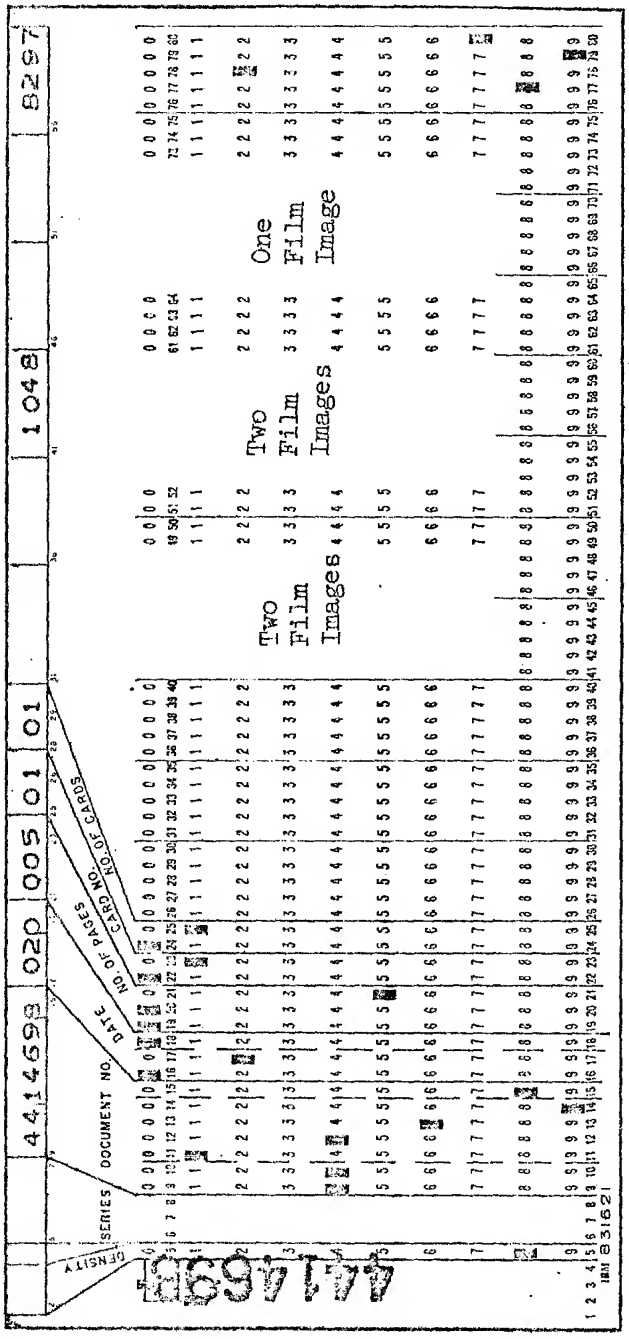
In the step-by-step processing or batch procedures established for the flow of most documents, microfilming occurred after indexing, so that NODEX determination could be made first. This had one big disadvantage in that the microfilm of the document was not on file until after all other provessing had been completed.

Microfilming

Print service from the aperture film became the responsibility of the Circulation Branch. Any equipment developments or problems were the responsibility of the Machine Division, such as experimenting with improved aperture card positioners for Filmsort viewers and with methods of printing documents from the microfilm viewers.

Figure 13

Aperture Card From
the Aperture Card File



** 28 | 29 |

Memo for Record 28 Nov 55
Microfilm Program.
Machine Div 1947-58
60-1548/1

Ly Monthly Reports Jan 1965
71-18/1

F. The Source Card File

An important by-product of the Intellofax System was the establishment of a source card file. The Library early recognized the need for a card catalog of document sources, similar to the author file in a book catalog. In the first coding efforts of 1948 the classifier wrote the codes on a 3" x 5" form on which the typists had typed the bibliographic data. This so-called "35-2" slip (~~so-called~~ from the form number) was filed in the Library by source after the completion of key punching. With the inauguration of the Batch System* and the use of multilith mats for the preparation of the bibliographic data onto the IBM card, the Machine Division provided the Library with a 3 x 5 card.

source cards

These "cut" Intellofax cards were used as** until 1965, when the Library agreed to accept from the Machine Division a punched Intellofax card,[28] the advantage presumably being that these source cards could be sorted daily by machines.

The source card file served several purposes: (1) inventory of document holdings; (2) identification of a document; and (3) location of a document. Requesters looking for a specific document often did not have the

* See page 29

** Discussion had begun 10 years earlier in 1955.[29]

document number, but might know the source and/or year. The source cards were filed by source, year of publication, specific post or agency breakdown and document number. A brief title description of the enclosure, and a notation as to whether it was received or not received, microfilmed or not microfilmed, appeared on the card. After the librarian in the Circulation Branch had identified the document, she could then find it in the files- either in the hard copy files maintained in the same sequense as the source card file or after 1954 on microfilm. The approach to the microfilm was only through the document control number that appeared on the source card:

"D" control number---- on 16 mm. aperture card

"C" control number--- on 35 mm. reel

"V" control number--- not microfilmed and in hard copy

The source card that was prepared for NODEXES contained only an abbreviated bibliographic entry, i.e., source, document number, date and security classification. The title and country were not entered. This abbreviated adation saved typing time, but created problems for the Circulation Branch librarians who searched the Source Card File for document identification.

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Library

Maintain and service a central file of abbreviations and code names of intelligence documents

(Statement of Functions 20 Sept 50
from Ex AD/CD to Management Officer)

in Folder ~~CIA/Library/1947-48~~ Box 59-875/1
OCD History 1947--

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